ABANDONED WASTE DISPOSAL SITE STUDY
PROVINCE OF NOVA SCOTIA

88-00085/

ABANDONED WASTE DISPOSAL SITE STUDY

Province of Nova Scotia

Prepared for: Nova Scotia Department of the Environment and
Environment Canada

Prepared by: Terrance J. MacPherson
Environmental Assessment Division
Waste Management Section
Nova Scotia Department of the Environment

EXECUTIVE SUMMARY

An agreement was signed on September 16, 1983, between Environment Canada and the Nova Scotia Department of the Environment to share costs in a program which would identify all abandoned waste disposal sites in the province of Nova Scotia. The Nova Scotia Department of the Environment agreed to supply staff and equipment equivalent to one half of the total cost needed for the study and Environment Canada agreed to pay the other half of the estimated total cost.

The intent was to classify each site into one of three categories (Priority I, II, or III) depending on its risk potential for hazard to human health and the surrounding environment.

Before any field work was conducted, preliminary research was necessary to locate each abandoned waste disposal site. The Nova Scotia Department of the Environment and Environment Canada's files were reviewed, letters were distributed to all municipalities in the province, and advertisements requesting information from the general public were placed in newspapers across the province. In addition, current and outdated 1:50000 topographic maps were scrutinized for indicated abandoned waste disposal sites.

Field investigations consisted of a visual evaluation of each site, completion of a site assessment form, photographs, and location of the area on a 1:50000 series topographic map. Information regarding the site contents was obtained from relevant government files, municipal officials, and area residents.

As a result of the field and office work, 202 abandoned waste disposal sites were identified. Of this total, 30 sites were identified as part of an earlier (1971) Nova Scotia Department of Mines and Energy study. These sites were not classified because they were not identified until after the field portion of this study was completed. The remaining 172 sites identified were classified as follows:

Priority Classification	Number of Sites in Classification
I	15
II	123
III	34
Unclassified	30
TOTAL	202

Six of the fifteen Priority I Sites are abandoned coal mine dumps, seven are abandoned domestic garbage dumps, one is an abandoned industrial site, and one is an abandoned lead-zinc mine site.

This study also identifies, but does not classify, 57 inactive gold mine tailings sites and seventy active waste disposal sites.

A brief summary of the study recommendations are as follows:

1 The inventory of inactive/abandoned sites should be updated on an annual basis as active sites are closed or as new information regarding inactive sites is obtained.

2 Preliminary hydrogeological investigations should be conducted at 10 of the Priority I abandoned waste sites. Of the 6 Priority I coal mine dumps identified, only one representative site should be monitored at this time to determine the environmental impact on surrounding ground and surface waters. Pending the results of this monitoring, the remaining 5 coal mine dump sites may also require some monitoring.

3 The 30 sites identified as part of the 1971 study should be inspected and assessed.

4 Because mercury and arsenic problems are known to exist at inactive gold mine tailings sites, some hydrogeological investigations should be conducted at a selected number of these sites.

5 The active sites identified should be inspected and assessed in a manner consistent with the inactive site assessments.

INTRODUCTION

1.1 PURPOSE OF ABANDONED WASTE DISPOSAL SITE STUDY

On September 16, 1983, an agreement was signed between Environment Canada and Nova Scotia Department of the Environment to share costs (50/50) for the first phase of a program to identify all abandoned waste disposal sites in the Province of Nova Scotia.

The purpose of Phase I was to compile an inventory of all abandoned waste disposal sites in the province and determine whether each site had potential to have adverse effects on human health or the environment. This study identified sites existing on provincial, federal, municipal, and private property. Each site was individually scored and placed in one of three priority classifications. A priority I classification represents high risk potential to human health and environment, priority II and III represents medium and low risk potential respectively.

Subsequent phases of the abandoned waste disposal study should consist of hydrogeological and surface water sampling to determine the need for remedial measures necessary to mitigate pollution problems associated with the Priority I disposal sites. Although this first phase was cost shared between the provincial and federal environment departments, federal funding of future site investigations will be limited to investigations of federally owned sites.

Phase I concerned itself only with disposal areas abandoned as of September 30, 1984. A list of seventy active disposal sites operating in the Province has been included with this report for information purposes only (Appendix A). Although these sites were not arranged in order of priority in the same manner as abandoned sites they are included on the location maps in Appendix K.

The following sections from 1.2 to 1.6 are intended to give the reader background on Nova Scotia's typical industries, their size and population, and Nova Scotia's geology as it relates to waste disposal.

1.2 GEOGRAPHY

Nova Scotia runs northeast to southwest for a distance of approximately 600 kilometres, between the latitudes of 43 and 47 degrees. Cape Breton Island accounts for 170 kilometres of the Province's total length.[1] The width of Nova Scotia varies from 100 to 160 kilometres. Land area in the Province is approximately 55,491 square kilometres and the population (based on 1981 census) is 847,442.

1.3 HISTORY OF DEVELOPMENT

Nova Scotia has traditionally been dependent upon forestry, fishing, mining, and the tourist industry for economic growth.[7] As a result of the development of the fishing industry, hundreds of villages have been established along the coastline. Mining has focused mainly on coal, salt, gypsum, lead-zinc, gold, barite and limestone. Future mining developments include tin as a new resource.

Nova Scotia's manufacturing industries include steel production (including, until recently, the production of coke), textiles, petroleum refining, pulp and paper, surface finishing, electrical products, plastics, paints, and chemicals (e.g. chlorine, caustics, industrial gases).

1.4 THE BEDROCK GEOLOGY OF NOVA SCOTIA

Nova Scotia can be subdivided into eight morphological regions[3] (refer to figure 1.0).

1 **Cape Breton Basement Rocks** - This is a complex of remnants of Precambrian sediments and extrusive volcanic rocks. Although only exposed on Cape Breton Island they doubtless also are deeply buried under the rest of northern Nova Scotia.

2 **Meguma Folded Belt** - The second major region comprises the core of mainland Nova Scotia from the Yarmouth shore to Chedabucto Bay encompassing all of the Atlantic coastal area. It is built mainly from tightly folded slates and quartzites of the Meguma

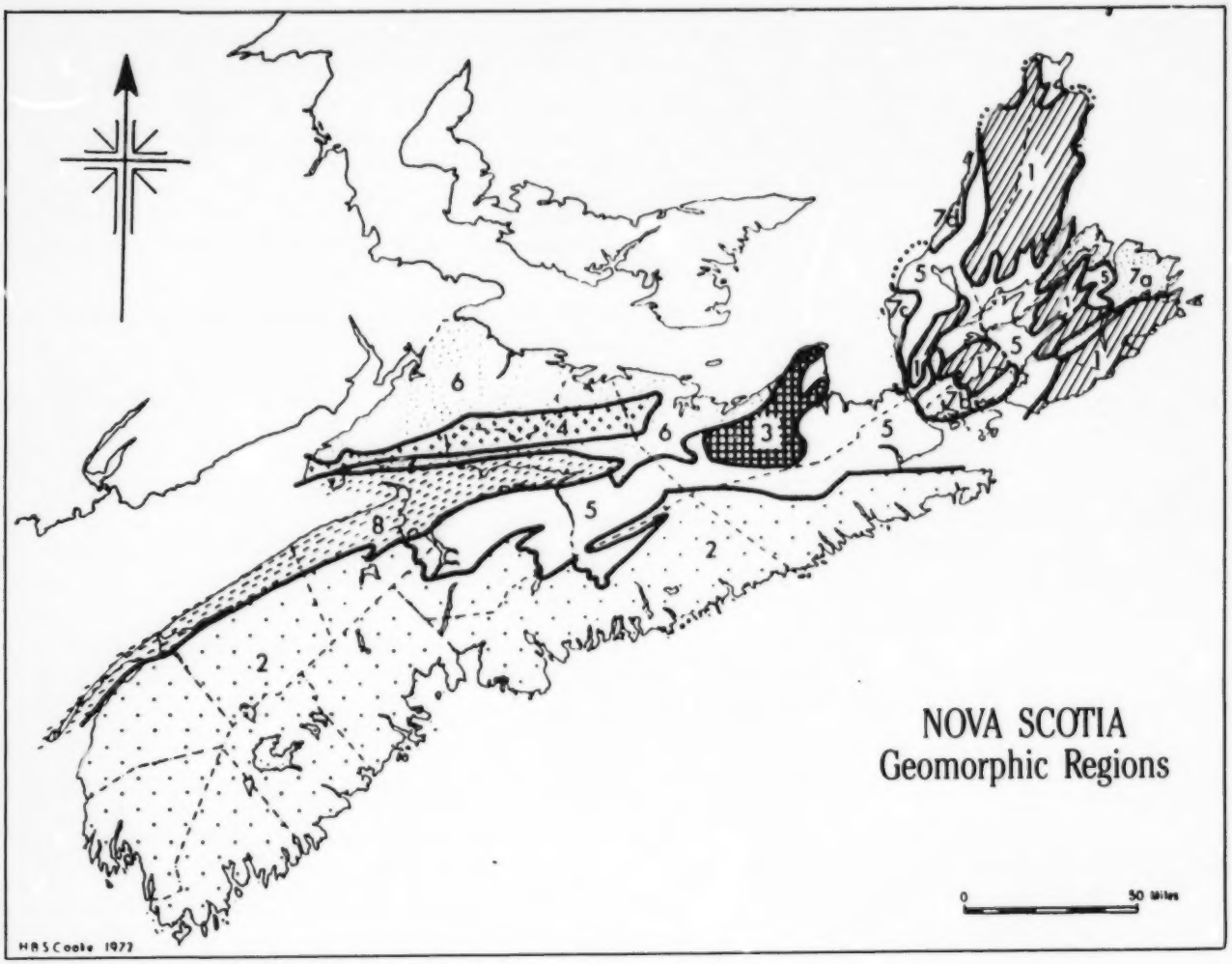


Figure 1.0 Geomorphic Regions of Nova Scotia [3]

Group, cut by large masses of intrusive granite of Devonian Age.

3 **Pictou – Cape George Hills** – This third region is a triangular hilly area extending from Central Pictou County to Cape George, north of Antigonish. It is formed of folded and faulted sedimentary and volcanic rocks of the Brown's Mountain Group and associated granite and gabbro intrusives.

4 **Cobequid Hills** – The fourth region is in some ways similar to the third, but it contains a predominance of granite intrusive rocks, together with the altered sediments and volcanics.

5 **Mississippian Belt** – The fifth region comprises the low lying parts of Cape Breton Island (except the coal basins) and a belt of the mainland from the Canso Strait to the Avon River encompassing parts of Antigonish, Guysborough, Pictou, Colchester, Halifax and Hants counties. It is comprised of the clastic sediments of the Horton group (sandstones, and shale) and the marine sediments of the Windsor Group (limestone, gypsum and mudstone).

6 **Springhill – Pictou Coal Basin** – The sixth region covers most of Cumberland and northwestern Pictou County. It is underlain by the sediments of the Carboniferous Age comprising of sandstones, shale and coal beds.

7 **Cape Breton Coal Basins** – This region is in reality four small basins on Cape Breton Island containing sediments similar to region 6. Individual components of the region are (a) the Sydney coal basin, (b) the Port Hawkesbury coal basin, (c) the Mabou coal basin, and (d) the Inverness coal basin.

8 **Fundy – Minas Syncline** – The eighth region comprises of sediments and lavas of Triassic Age which are folded into an elongated trough running from Central Colchester County westward under Cobequid Bay, Minas Basin, the Annapolis Valley, North Mountain and the Bay of Fundy.

1.5 SURFICIAL GEOLOGY

Glacial action had been responsible for most changes in the Nova Scotia surficial geology. When the glacial action progressed across the province large quantities of material were incorporated into the ice mass. This unsorted mass of consolidated material was deposited as glacial till. Generally till was scraped from the high ground and deposited in lower areas. Most material was not transported a great distance and reflects the underlying or nearby bedrock. As the ice sheets diminished the material incorporated in the ice sheet was deposited by water related action as outwash, eskers, and kames. These glacial features are highly permeable consisting of well rounded sands and gravels.

Depths of surficial material vary from non-existent in areas of bedrock outcrop to tens of meters. Thick overburdens are generally associated with relatively soft sedimentary bedrock such as shale and sandstone. Extreme depths will be likely associated with buried palo channels (ancient rivers). In areas of relatively resistant bedrock (igneous and metamorphic rocks such as granite and quartzite) thick deposits of till are generally associated with drumlin structures.

1.6 SOILS (CLAY AND SILT CONTENT)

The clay-silt content of an overburden is a dominant factor in the suitability of a site for waste disposal. Soils are developed from the underlying unconsolidated or bedrock material by physical and chemical processes. As with the overburden, soils are not generally far removed from the parent material, therefore it is possible to estimate overburden characteristics based on the readily available soils mapping. The following section generalizes the composition of soils in the various areas of Nova Scotia.

The majority of mainland Nova Scotia underlain by the Meguma Fold Belt can be described as having relatively thin soils of coarse texture with moderate to rapid permeability. Clay-silt content is generally low. The exceptions in this area are drumlin structures mainly in Lunenburg County which contain a slightly higher clay content.

In Central and Northern Nova Scotia, and parts of Cape Breton Island underlain by the Mississippian Belt especially the Windsor Group, relatively thick fine grained soils with low permeability may develop. The clay-silt content of such sediments is relatively high. In the same areas soils developed over the Coal Basins or Horton Group may be relatively thick medium grained and fairly permeable. The clay-silt content of these soils will be lower than those above.

Soils developed over the Highland areas such as the Cape Breton Basement Rocks, Cobequid Hills and Pictou-Cape George Hills are generally thin medium to coarse grained with fairly rapid permeability. The clay-silt content will be low.

Soils developed over the Triassic sediments and lavas of the Minas Fundy Syncline are generally coarse with rapid permeability. The clay-silt content in these soils will be generally low. In areas underlain by tighter shale units such as the Blomidon formation the texture is much finer and permeability lower with clay-silt content higher.

For a more accurate description of Nova Scotia soils refer to the individual soils reports prepared by Nova Scotia Department of Agriculture and Marketing and Agriculture Canada.[9]

METHODS / PROCEDURES

2.1 INFORMATION SOURCES

To aid in locating the majority of abandoned waste disposal sites the following sources of information were used:

1 Information obtained from municipalities in the Province of Nova Scotia. A letter was sent to all municipalities requesting abandoned waste disposal site information in their region (Appendix B).

2 Nova Scotia Department of the Environment[13] and Environment Canada file information and internal reports.

3 Current and outdated editions of 1:50000 topographic maps.

4 Province wide newspaper advertisements requesting abandoned waste disposal site information from the general public (Appendix C).

5 Old editions of manufacturing directories were reviewed to locate defunct industries which may in the past have generated wastes of concern.[4, 11]

2.2 NUMBERING SYSTEM FOR IDENTIFIED ABANDONED DUMP SITES

The system used to identify each site was an alphanumeric code where the first three letters described in what county the site was located and the following three numbers reflecting the order of inspection in that county.

Nova Scotia is subdivided into the following counties, Annapolis, Antigonish, Cape Breton, Colchester, Cumberland, Digby, Guysborough, Halifax, Hants, Inverness, Kings, Lunenburg, Pictou, Queens, Richmond, Shelburne, Victoria and Yarmouth. The corresponding alphanumeric code for each county is as follows: ANN-000, ANT-000, CAP-000, COL-000, CUM-000, DIG-000, GUY-000, HAL-000, HAN-000, INV-000, KIN-000, LUN-000, PIC-000, QUE-000, RIC-000, SHE-000, VIC-000, and YAR-000.

2.3 NUMBERING SYSTEM FOR ACTIVE DUMP SITES

The seventy active waste disposal sites identified during this inventory have been plotted on maps located in Appendix K which are on file with the Nova Scotia Department of the Environment Library.

2.4 ABANDONED WASTE DISPOSAL SITE FIELD ASSESSMENT

Once the "paper search" identified a site, the field investigation consisted of a property inspection with photographs taken for future reference. A site inspection form (Appendix D) was used for each field evaluation. This ensured a consistent assessment for each of the 172 classified sites.

In addition, topographic maps (1:50000 series) were used to facilitate the identification and location of nearby developments or water courses. Contour elevations were also obtained from the 1:50000 map sheets.

Occasionally a number of items in the survey sheet had to be estimated on a subjective basis. For example, horizontal dimensions of a given site were approximated by pacing or visual estimation. The depth of waste was particularly difficult to estimate without drilling on-site, therefore these numbers should be treated accordingly.

If the disposal site owner could not confirm the type of waste disposed on site and if all other information sources including the site inspection did not indicate to the contrary, it was assumed that virtually all wastes disposed were domestic or household waste.

Precipitation information was obtained from reports published by Environment Canada.[2] Annual precipitation across the province varies between 1000 and 1500 mm with Cape Breton receiving a slightly larger amount than mainland Nova Scotia.

Information regarding proximity to watershed areas was obtained through maps compiled by the Maritime Resource Management Service (1980). This also provided data on the location

of water wells used by large municipalities.

Ecological Reserve information was obtained from a report published by the Canadian Committee for the International Biological Programme.[5]

The clay content in overburden was estimated by using soil survey reports compiled by Agriculture Canada and the Nova Scotia Department of Agriculture and Marketing.[9]

2.5 SITE SCORING SYSTEM

Once all field survey sheets were completed for the 172 abandoned waste disposal areas, a system was devised to score each site on a point basis.

This was used to ensure a uniform method of scoring each site in a Priority I, II, or III classification.

Referring to the Scoring System in Appendix E each item is briefly described below:

1 Type of Waste: *2-20 points.* This waste classification was broken into three groups, high, medium, and low concern. This was again subdivided into groups of high and low tonnage. It can be seen that as tonnages increase with a particular type of waste the scoring also increases. The table below outlines waste types and what concern it may be.

High Concern Wastes

Wastes on Federal Interim List of Dangerous Wastes

Wastes identified by Province as hazardous wastes (pesticides, herbicides, paint sludge, acid and alkaline solutions, solvents)

Materials regulated by the Environmental Contaminants Act, e.g., P.C.B.'s

Institutional waste (lab, schools, hospitals, etc.)

Pathological wastes and animal carcasses

Low level radioactive waste.

Medium Concern Wastes

Liquid wastes not referred to above, petroleum products, septic tank pumpings, agricultural chemical containers

Food processing wastes, vegetables and fish products

Incinerator residue

Mine waste.

Low Concern Wastes

Vegetable wastes (potatoes, peas, etc.)

Municipal solid (household) wastes

Industrial and commercial solid waste: construction materials (wood, metal, hay, sand/salt piles, etc.).

2 Proximity to Private, Commercial, or Municipal Water Supply: *5-20 points.* This scoring is straightforward where maximum points are given when the site is within 100 metres of a water supply and minimum score when the site is beyond one kilometre.

3 Population Served by the Water Supply: *7-10 points.* The higher score in this item reflects a large population using the water source.

4 Proximity of Waste to the Water Table: *5-20 points.* A higher point score was given if the waste is in close proximity to the water table. The potential for increased mobility of waste contaminants is considered greater where contact with the water table is a possibility.

5 Surrounding Lands and Proximity to Existing or Proposed Development: *1-20 points.* Proximity to residential areas and schools was given similar scoring. Commercial and agricultural development were assigned lower points as they did not directly deal with

human health. Should a large agricultural facility or food industry be situated near a site the information was noted. Flexibility in describing a site hazard potential was allowed for in the site inspectors comments.

6 Condition of Waste Disposal Site: *0-10 points.* An uncovered waste site is less appealing and has greater chance for transport of material across the property via rainfall, wind or vectors. Depending on the type of waste, breakdown may occur more readily by exposure to air and moisture. If metals are involved, mobility may be increased if the site is left uncovered.

7 Quantity of Waste: *3-15 points.* A higher point score allowance is made for larger quantities of waste which have a greater potential to cause environmental problems.

8 Groundwater Flow Relative to Existing or Proposed Development: *0-10 points.* The topography is usually an indicator of groundwater flow direction (i.e., water flow may follow topography). With this in mind, if a site was elevated above a given development it had potential to impact that development downgradient and consequently received a higher score.

9 Yearly Precipitation in Millimetres: *0-10 points.* As precipitation (annual) increases, more rainwater is available to percolate through the disposal area. It is assumed water is the primary method of transport for trace contaminants and thus higher point score allowance is provided for increased rainfall.

10 Evidence of leachate: *0-20 points.* If leachate was observed this meant soluble components of the disposal area (e.g., trace metals and ogranics) are now mobile and may be a cause for concern.

11 Method of Operation: *2-10 points.* It is considered an open dump operation has greater potential for leachate production than a sanitary landfill. A properly run sanitary landfill has daily cover which in the long term aids to prevent leachate migration.

12 Proximity to Surface Water: *0-20 points.* As this pertains to fresh watercourses concern is expressed for any users of the freshwater habitat.

13 Surface Water Use: *0-15 points.* Drinking water use has been given a higher point score value than irrigation. Irrigation is considered an indirect use of surface water.

14 Distance to Sensitive Environments or Critical Habitats: *2-10 points.* This item was designed to include proximity to watershed areas (supplying a number of homes), protected areas for water fowl and specific types of wildlife in general.

15 Soil Permeability of Disposal Area: *5-20 points.* As clay content in soil increases the ability to prevent leachate movement is enhanced, low permeability soils are awarded low scores.

16 Bedrock Permeability of Disposal Area: *5-20 points.* The permeability of bedrock was considered an important factor in the movement of leachate. Sandstone and fractured granite were placed in a very permeable classification. Evaporites, siltstone and conglomerate were moderately permeable and quartzite, slate and shale were described as relatively impermeable.

17 Depth to Bedrock of Disposal Area: *5-20 points.* Shallow overburden on a dump site property increased the potential of leachate percolation through the bedrock.

18 Topography: *0-5 points.* A moderate slope created optimum surface drainage from a disposal site property. Flat slopes tend to hold water, create ponds and increase chances of water movement through waste. Steep slopes may have a tendency to cause erosion exposing wastes.

19 Signs of Vegetation Stress: *0-5 points.* Vegetative growth in a dump site property is a positive indication that erosion wil be decreased, percolation will be reduced, and the nature of waste in the dump is that which can support plant life.

20 Evidence of Vectors: *0-5 points.* Rats, seagulls and flies are known to transport and transmit diseases.

21 Evidence of Gas or Odours: *0-5 points.* Unpleasant odours and methane production are known problems; the potential may exist for methane gas explosions.

22 Security of Disposal Area: *0-15 points.* An open waste disposal site makes it easy for illegal dumping at an abandoned waste disposal site. This presents a problem when a site has been restored to promote natural remediation of the property.

RESULTS

3.1 CLASSIFYING THE IDENTIFIED SITES

When priorizing each of the 172 classified abandoned waste disposal sites the following system was used:

Priority Classification	Accumulated Points Necessary
I	200 - 295
II	130 - 199
III	0 - 129

The score selected for each classification was a result of steering committee discussions and a review of all pertinent data relating to the study. A matrix contained in Appendix F, was created to give easy access to all parameter scores for each abandoned waste disposal site. The matrix has information regarding the site location, individual parameter scores, score total, classification, and in some cases contents of the site.

3.2 UNCLASSIFIED ABANDONED WASTE DISPOSAL SITES

A total of 30 abandoned waste disposal sites were not classified by the normal procedures used in this report. These disposal areas were discovered at a time when this report was in the final stages of preparation. Information regarding the location, type of disposal site, bedrock, and general remarks has been extracted from an inventory completed in 1971[6] and is contained in Appendix I.

3.3 DISTRIBUTION OF SCORE TOTALS

Once all sites were individually scored the distribution was as follows:

Priority Classification	Number of Sites in Classification
I	15
II	123
III	34
Unclassified	30
TOTAL	202

As figure 2.0 illustrates, the majority of scores centre on 140 points.

The highest scoring site in the study was a coal mine tailings disposal area, located in Sydney Mines, Cape Breton. It accumulated 252 points out of a possible 295. The lowest scoring (71 points) dump site was found on Canada Hill Road, Shelburne County, Nova Scotia.

3.4 PAST TRENDS FOR GARBAGE DISPOSAL

Past disposal methods in Nova Scotia reflect a trend toward the location of disposal sites in close proximity to watercourses and, in some situations, direct utilization of a watercourse for disposal purposes. These natural topographic depressions made it harder to see where waste was going. Residential development as a rule would not usually occur near such areas. The ocean was also considered a convenient disposal site.

Without a municipal garbage collection system it was common practice in many smaller towns and villages for homeowners to have private dumps in their backyards. Industrial and mining waste dumps were situated conveniently close to the generation source.

3.5 ACTIVE WASTE DISPOSAL SITES IN NOVA SCOTIA

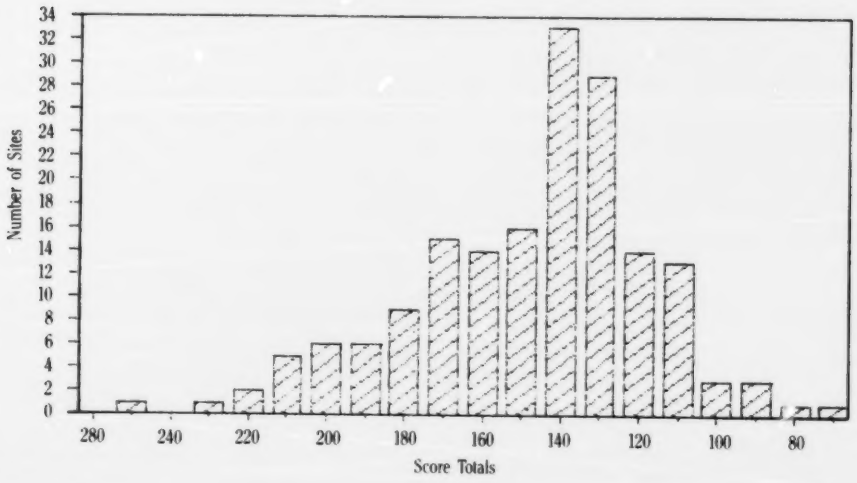
As this study was specific to abandoned or inactive waste disposal sites, a list of active dumps has been included for information purposes only. Appendix A lists seventy active sites in the Province outlining the location, owner, type (landfill, open dump, incinerator) and size.

3.6 GOLD MINING IN NOVA SCOTIA

As Appendix G illustrates, 57 inactive gold mine tailings sites have been identified by reviewing a report compiled by Energy, Mines and Resources Canada.[10] The majority of these gold mining operations were started in the mid eighteen hundreds and continued through to the late nineteen twenties. Since this time a few mining properties continued operating, not at the same level of activity of previous endeavours.

A report by the Nova Scotia Department of Mines and Energy is listed as Appendix J and outlines potential problems associated with arsenic residues in gold mine tailings and the need for further studies.

Figure 2.0 Distribution of Total Point Scores



Discussion of Results

4.1 Similarities among Priority I Sites

The scoring process identified 15 Priority I sites out of 172 abandoned waste disposal sites located in the Province. Some common characteristics of these disposal areas were:

1 Large waste volume, usually in excess of 1000 tonnes.

2 Type of waste, in most cases medium or high concern wastes.

3 Shallow or low clay content of overburden.

4 Permeable bedrock beneath disposal area.

5 Waste contact with water table and leachate draining from the disposal area.

6 Close proximity to residential development and development down gradient of the disposal area.

7 Private or municipal water supplies (surface or well water) in close proximity to the disposal area.

4.2 Brief Description of Priority I Sites

The following briefly describes each Priority I site and reasons why it achieved a score above 200 points.

ANN-008, Vault Road, Annapolis County: *210 Points.* This site is a privately owned disposal facility covering an area of approximately 2.5 hectares. The site contains over 1000 metric tonnes of incinerator residue which is classified as a medium concern waste. The property has a low clay content in shallow overburden and is suspected to have close proximity to the water table and nearby surface water. The site is also within 300 metres of residential properties and has a well 25 metres down gradient from the dump site. In addition to the above items, leachate was identified on the property.

CAP-004, Middle Cape, Cape Breton County: *203 Points.* This is a 0.23 hectare site with a residential property located within 300 metres. The Middle Cape dump site containing mainly household garbage has shallow overburden overlying very permeable (sandstone and siltstone) bedrock. Dumping of garbage was almost directly into a nearby stream with downstream landowners using this as a water supply. The adjacent residential property also has a well within 300 metres of the dump.

CAP-005, New Waterford Coal Mine Dump, Cape Breton County: *211 Points.* This 1.88 hectare site has residential dwellings within 300 metres. The coal mine and household wastes on the property exceeded 1000 tonnes with a large portion falling over a 15 metre embankment to the Atlantic Ocean. Most homes surrounding the property are on a central water supply, therefore drinking water contamination is not considered a problem.

CAP-007, Sydney Mines Coal Mine Dump, Cape Breton County: *252 Points.* This is a very large coal mine dump covering 27.0 hectares in the Town of Sydney Mines. The quantity of waste is well in excess of 1000 tonnes with leachate draining into Sydney Harbour. There is probable waste contact with the water table and the site has shallow overburden overlying permeable bedrock. At present, a local company is involved in a pilot project to reclaim remaining coal from these tailings.

CAP-009, North Sydney, Cape Breton County: *202 Points.* This is a small (0.74 hectares) domestic dump surrounded by development in the Town of North Sydney. The water table is estimated to be shallow as dumping occurs directly in a marsh area and bedrock is classified as permeable with thin overburden.

CAP-011, Florence Coal Mine Dump, Cape Breton County: *217 Points.* This dump covers an area of approximately 2.14 hectares and was probably used as a scrap yard with metal wastes scattered about the property. There was possible contact of waste with the water table and up to five homes (plus a legion hall) are within 300 metres of the dump site. The bedrock is described as very permeable and iron staining was observed in ponds

and drainage from the property. The major component of waste on the site is coal mine tailings, estimated in excess of 1000 metric tonnes.

CAP-017, Gardiner Mines Coal Mine Dump, Cape Breton County: *239 Points.* The Gardiner Mines coal tailings dump covered a large area of approximately 14.0 hectares. This site has a volume of waste in excess of 1000 tonnes with residential properties in a 40 metre radius. A marsh area down gradient of the dump was completely discoloured by precipitated iron. It is likely waste is in contact with the water table. Bedrock is described as very permeable with shallow overburden.

CAP-018, Scotchtown Coal Mine Dump, Cape Breton County: *212 Points.* The Scotchtown coal mine dump covers an area of approximately 28.0 hectares with a waste volume well in excess of 1000 tonnes. Residential properties are within 60 metres of this abandoned dump area. Presently this site, as with Sydney Mines coal mine dump, is being looked at for reprocessing the tailings. Iron staining was observed in ditches leading from the property and waste is possibly in contact with the water table. The bedrock is described as very permeable and the site is less than 300 metres from a sensitive environment.

COL-010, College Road, Bible Hill: *201 Points.* This abandoned waste disposal site has a land area of approximately 12.2 hectares with a domestic waste volume in excess of 1000 tonnes. The proximity of waste to the water table was approximated between 0 and 5 metres. Residential development is within 300 metres of the disposal site. Leachate was observed on the property and a surface water course was estimated to be within 300 metres of the disposal site. Bedrock below this disposal site was considered very permeable with overburden less than 10 metres. During the site investigation it was observed that the area was regraded and a baseball field was situated on the abandoned dump property. It is also noted a domestic water supply is within 300 metres of the disposal site.

CUM-002, MacDonald Road, Cumberland County: *204 Points.* The MacDonald Road dump site covers an area of approximately 1.7 hectares with a waste volume in excess of 1000 tonnes. There is a mixture of household and PCB contaminated wastes buried on this property and the site is within 100 metres of a private water supply. This dump had farmland on its eastern border and a residential property on its western border. Leachate was observed on the site. Residential development is down gradient of ground water flow. The bedrock is described as very permeable beneath shallow overburden. A surface watercourse (brook) is also within 300 metres of the MacDonald Road dump. The Nova Scotia Department of the Environment currently has 8 monitoring wells on site.

CUM-003, Town of Amherst, Cumberland County: *220 Points.* This dump is surrounded by farmland on three sides and a highway borders the fourth side. Waste is exposed in many areas of the 0.56 hectare dump. It appears the majority of garbage on site is household amounting to less than 1000 tonnes. The water table was approximately 5.0 metres below the surface and a river was only 6.0 metres from the dump site. Leachate was observed during this particular inspection.

CUM-005, Enheat Property, Amherst: *220 Points.* The Enheat abandoned waste disposal site is relatively small (0.14 hectares) and is suspected to contain organic solvents which are classified as a high concern waste. This site is within 100 metres of a municipal water supply and the water table is considered shallow. Overburden is thin on this property and both soil and bedrock have a high permeability.

INV-003, Village of Inverness, Inverness County: *226 Points.* This 2.6 hectare dump contains mostly coal mine tailings with minor amounts of household garbage. It is located approximately 305 metres from the nearest home and the direction of groundwater flow has potential to impact nearby development. Bedrock is described as very permeable with shallow overburden. Leachate was observed as the property during this site inspection.

PIC-001, New Glasgow, Pictou County: *205 Points.* This 1.3 hectare site stretches a distance of 245 metres along the banks of East River. Much of the wastes was incinerated and mixed with household garbage. The dump area is mainly surrounded by industrial

development on three sides and East River on the fourth side. Leachate staining was observed along the river bank.

RIC-006, Stirling Mine, Richmond County: *207 Points.* This is a large lead-zinc mine site abandoned for forty to fifty years. The area of concern is a tailings pond which covers at least 4.7 hectares. The tailings are in contact with the water table and a small stream flows through the mine area. Residential properties are located up gradient approximately 400 metres away. The wastes, in excess of 1000 tonnes, sit on very permeable bedrock with low clay content overburden.

4.3 PRIORITY II SITES

The abandoned waste disposal site study identified 123 Priority II sites. Although the majority of these areas are placed in that classification by our site scoring procedure, 7 of the 123 were given a high Priority II description by inspector's opinion. This is the personal opinion of that individual and is independent of our standard scoring system. Table 1.0 briefly outlines the problem with each disposal site and its location.

Table 1.0 High Priority II Disposal Sites as Described by Inspector's Comments

Site Number	Location	Score	Problem with Disposal Site
ANT-001	Brierly Brook	155	This is a 2.2 hectare site with a domestic waste volume in excess of 1000 tonnes. The water table is considered shallow and a private water supply is within 200 metres of the disposal area. Soil and bedrock permeability is moderate and overburden is less than 10 metres.
CUM-006	Old Robb Plant	190	This disposal site is located within 100 metres of a municipal water supply and the water table is within approximately 5.0 metres of disposed paint products and construction material. The bedrock in this area is considered very permeable with shallow overburden.
GUY-009	Glenelg	176	This is a small (0.36 hectare) dump site abandoned many years ago. Soil and bedrock permeability is high and overburden is shallow. A mobile home is now located on the abandoned dump site.
HAL-006	Crichton Ave.	157	This 2.3 hectare site has residential development within 300 metres of the disposal site and waste volume is in excess of 1000 tonnes. Incinerator residue was placed on this property during its active period.
HAL-010	Rainbow Haven	196	This is a very small dump in which transformers are suspected to be buried. The waste is considered high concern and a water supply is located within 100 metres.
INV-006	Petit 'Etang	149	This is a small dump (0.27 hectares) containing a high volume of medium concern wastes. A crab processing operation now exists over the abandoned dump site.
PIC-002	Priestville	162	The Priestville disposal site is large (40 hectares) and contains a high volume of medium concern wastes. Test pits have recently been dug on the property and leachate was observed in combination with methane gas bubbles. This dump is upgradient of nearby (500 metres) residential properties.

Conclusions and Recommendations

1 Phase I of the abandoned waste disposal site study identified 172 inactive and 70 active dump sites. It is acknowledged the potential does exist that sites may have been overlooked during the research portion of the study (please refer to Section 3.2)

It is recommended that this list be up-dated and distributed to planning or development agencies to ensure development does not encroach upon these areas. This updated list should also include the 30 abandoned waste disposal sites currently unclassified (Appendix I).

2 Fifteen Priority I disposal sites were selected from the 172 classified abandoned waste disposal sites. Six of these fifteen sites are coal mine tailings disposal areas.

It is recommended that one of the six Priority I coal mine tailings disposal sites be selected for further study. It is also recommended preliminary hydrogeological investigations be conducted on the remaining nine Priority I abandoned waste disposal sites.

3 This study identified seven high Priority II disposal areas.

It is recommended that surface and groundwater within 300 metres of these disposal areas be sampled and analyzed for contaminants.

4 It is acknowledged that this study focused only on inactive dump sites in the province of Nova Scotia.

It is recommended that a similar site assessment and scoring be conducted on active waste disposal operations in the Province of Nova Scotia.

5 Referring to Appendix G it is noted there were 57 operating gold mines in Nova Scotia between 1850 and 1929. A report recently published by Nova Scotia Department of Mines and Energy (Appendix J) outlined problems associated with these abandoned operations and the necessity for environmental monitoring.

It is recommended we further examine abandoned and active gold mining operations in the province. A representative site such as the Goldenville location would be suggested where preliminary work has already been conducted by the Nova Scotia Department of Mines and Energy.

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APPENDIX A
ACTIVE SOLID WASTE DISPOSAL SITES IN THE PROVINCE OF NOVA SCOTIA

ACTIVE SOLID WASTE DISPOSAL SITES
PROVINCE OF NOVA SCOTIA

No.	County	Location	Owner	Type	Size
1.	ANNAPOLIS	Graywood	Municipality	incinerator	10 acres
2.		West Paradise	Municipality	landfill	6 acres
3.		Middleton	Town	open dump	20 acres
4.	ANTIGONISH	James River	Mun. of Antigonish	landfill	40 acres
5.	CAPE BRETON	New Victoria	New Waterford	landfill	70 acres
6.		Dominion	Town	landfill	30 acres
7.		Sydney	City	landfill	10 acres
8.		Glace Bay	Town	landfill	100 acres
9.		Louisbourg	Louisbourg		
10.		Woodbine	County	landfill	100 acres
11.	COLCHESTER	Portapique	Municipality	open dump	16 acres
12.		Tatamagouche	Municipality	landfill	4 acres
13.		U. Stewiacke	Municipality	incinerator	4 acres
14.		Wittenburg	Municipality	landfill	5 acres
15.	CUMBERLAND	Joggins	Municipality	open dump	30 acres
16.		South Hampton	Municipality	landfill	9 acres
17.		Greenville		open dump	
18.		Linden	Municipality	open dump	5 acres
19.		Oxford	Town	open dump	4 acres
20.		Pugwash	Municipality	landfill	24 acres
21.		Parrsboro	Town	open dump	3 acres
22.		Sugar Loaf	Municipality	landfill	2 acres
23.		Wentworth	Municipality	landfill	10 acres
24.		Tidnish	Municipality	landfill	10 acres
25.		Westchester	Municipality	open dump	0.5 acres
26.		Advocate	Municipality	incinerator	
27.	DIGBY	Tiverton	Municipality	open dump	25 acres
28.		Brier Island	Municipality	landfill	10 acres
29.		Marsh Road	R. Thomas	open dump	10 acres
30.		Rossway		open dump	
31.	GUYSBOROUGH	Lincolnville	Municipality	landfill	30 acres
32.		Port Bickerton	Municipality		
33.	HALIFAX	U. Musquodoboit	Ratepayers	open dump	10 acres
34.		Musquodoboit Hbr.	Ratepayers	open dump	1 acre
35.		Mount Uniacke	Regional Authority	landfill	15 acres
36.		Lake Charlotte	F. Webber	incinerator	4 acres
37.		Tangier	R. Cooper	incinerator	1 acre
38.		Necum Teuch	L. MacDonald	incinerator	20 acres
39.	HANTS	Georgefield	East Hants		
40.		Cogmagun	West Hants		
41.	INVERNESS	Kenlock	Municipality	landfill	20 acres
42.		Pleasant Bay	County	open dump	1 acre
43.		Big Brook	Private	landfill	
44.		Grand Etang	Municipality	open burn	
45.	KINGS	Kentville	Municipality	landfill	45 acres
46.	LUNENBURG	New Ross	Dump Commission	incinerator	3 acres
47.		Western Shore	R. Slaunwhite	open dump	25 acres
48.		Whynott's Sett.	Municipality	incinerator	20 acres

Continued

No.	County	Location	Owner	Type	Size
49.		Simm's Settlement	C. Nauss	landfill	100 acres
50.		Mahone Bay	Town	landfill	5 acres
51.		Blue Rocks	Lunenburg (Town)	open dump	
52.	PICTOU	Mount Williams	Municipality	landfill	226 acres
53.	QUEENS	Westernhead	Municipality	incinerator	
54.		Westfield	Municipality	incinerator	4 acres
55.	RICHMOND	Grand River	Municipality	landfill	18 acres
56.		Port Royal	Municipality	landfill	10 acres
57.		Point Tuppe	N.S. Forest Ind.	landfill	30 acres
58.		Port Malcolm	N.S. Forest Ind.	landfill	100 acres
59.		Port Malcolm	Gulf Oil	landfill	200 acres
60.	SHELBURNE	Barrington	Municipality	incinerator	200 acres
61.		Shelburne	Town	open dump	20 acres
62.		West Green Hbr.	Municipality	incinerator	15 acres
63.	VICTORIA	Baddeck	Municipality	landfill	40 acres
64.		Dingwall	County	landfill	40 acres
65.	YARMOUTH	Wedgeport	County	open dump	1 acre
66.		Pubnico	County	open dump	1 acre
67.		Hubbards	Mun. of Argyle	incinerator	5 acres
68.		Carleton	Mun. of Yarmouth	open dump	5 acres
69.		Wellington	Mun. of Yarmouth	open dump	25 acres
70.		Brooklyn Road	Yarmouth (Town)	landfill	

APPENDIX B

LETTER DISTRIBUTED TO MUNICIPALITIES

Nova Scotia
Department of Environment

PO Box 2107
Halifax, Nova Scotia
B3J 3B7

Our file no: **1556-1**

October 13, 1983

Attention:
Clerk Treasurer

Gentlemen:

RE: ABANDONED WASTE DISPOSAL SITES - PROVINCE OF NOVA SCOTIA

The Nova Scotia Department of the Environment, in association with Environment Canada is conducting a joint project to identify all abandoned waste disposal sites in the Province.

To make this study as comprehensive as possible we are requesting any information you may have or can obtain regarding the location of active and/or abandoned land disposal sites in your Municipality. We would also appreciate any information on disposal areas used by local industry. This data may be forwarded in writing or by telephone (424-5300), to our Study Coordinator, Mr. Terry MacPherson.

Our staff will contacting your office in approximately 2 weeks to determine your response and/or any specific assistance you may require. Your cooperation in this matter is greatly appreciated.

Yours truly,

A.J. Crouse, P.Eng.,
Director, Environmental Assessment

TJM/evw
c.c. D.C. Hynick, P.Eng.
Ian Travers, P.Eng (EPS)
T.J. MacPherson

APPENDIX C

NEWSPAPER ADVERTISEMENT USED FOR THE ABANDONED WASTE DISPOSAL SITE STUDY

Notice

Canada

Nova Scotia

Province of Nova Scotia

The Nova Scotia Department of the Environment in association with Environment Canada is conducting a joint project to identify all abandoned waste disposal sites in the Province.

To make this study as comprehensive as possible we are requesting any information the public may have regarding the location of abandoned waste disposal sites in the Province.

This information may be forwarded to the Study Coordinator, Mr. Terry MacPherson, Nova Scotia Department of the Environment, PO Box 2107, Halifax, Nova Scotia B3J 3B7 or telephone 424-5300.

APPENDIX D
FIELD SURVEY ASSESSMENT FORM

SITE INSPECTION FORM

PROVINCE OF NOVA SCOTIA

ABANDONED WASTE DISPOSAL SITE SURVEY

A. LOCATION:

Site No: _____

County: _____

Municipality: _____

Road: _____

U.T.M. Coordinates: N. _____ Map Code No. _____

E. _____ Page No. _____

Approximate Elevation: _____ Metric Geodetic

Distance to the Nearest House _____ Kilometres, _____ Metres

Surrounding Land Use (Existing or Proposed):

	300 M. Radius	301 M-1.0 Kilometre Radius	Beyond 1.0 Kilometre Radius
N.			
S.			
E.			
W.			

B. SITE CHARACTERISTICS:

Dimensions: Length _____ Metres Width _____ Metres

Area: _____ Square Metres _____ Hectares

Approximate Depth of Waste _____ Metres

Present Condition: ( ) Open _____

( ) Covered (Specify) _____

( ) Other (Specify) _____

Evidence of Vectors (rats, birds, etc.) ( ) Yes ( ) No

Type of Waste

Household _____

Industrial (Specify) _____

Hazardous Chemicals (Specify) _____

Other (Specify) _____

Quantity of Waste _____Metric Tonnes _____Cubic Metres

Type of Waste Observed During Field Investigation: _____

_____

Method of Operation:
( ) Open Dump
( ) Open Dump with Burning
( ) Dump with Occasional Cover
( ) Sanitary Landfill
( ) Other (Specify) _____

Period of Operation:_____ to _____ Total Years of Operation _____

Who had access to the site during operation?_____

_____

_____

Evidence of Leachate ( ) NO ( ) YES Comments: _____

_____

Evidence of Methane Gas or Odours ( ) NO ( ) YES Comments _____

_____

Status of Vegetation: _____

_____

C. SITE HYDROGEOLOGY:

Yearly Precipitation (Millimetres): >1400 _____, 1251-1400 _____, 1000-1250 _____

Estimated Depth to Water Table:_____ Metres

Evidence of Water Table Contact with Waste:_____

Number of wells in immediate area:_____

Distance to nearest well _____ Metres Private _____Public _____

Well is Upgradient _____, Well is Downgradient _____

Population Served by Nearest Well: _____

Distance to Nearest Surface Water Course: _____ Metres

Surface Water Use: _____

Type of Soil/Overburden: _____

Estimated Depth to Bedrock: _____ Metres Type of Bedrock _____

Estimated Overburden Clay Content: 0-15% _____, 15-50% _____, Greater than 50% _____

Disposal Site Topography: Steep Slope _____, Moderate _____, Flat _____

Distance to Sensitive Environments or Critical Habitat:(Estuaries, wetlands, animal sanctuaries, watershed areas, etc.):

Metres _____, Kilometres _____

D. GENERAL NOTES:

Property Owner & Number: _____

Past Owner (during operation): _____

Past or Present Problem with Site: _____

_____

Reason for Closing or Abandoning Site: _____

_____

Closure Procedures: _____

_____

Site Security: Security Fence with Lock _____, Security Gate with no Fence _____,

No Fence or Gate _____.

Sources of Data & Contacts: _____

_____

_____

Recommendations: _____

_____

_____

Date: _____ Inspected By: _____

APPENDIX E
SITE SCORING SYSTEM

Site Scoring System

1. Type of Waste:

High Concern Wastes > 40 tonnes	20 pts.
High Concern Wastes < 40 tonnes	18 pts.
Medium Concern Wastes > 1000 tonnes	15 pts.
Medium Concern Wastes < 1000 tonnes	10 pts.
Low Concern Wastes > 1000 tonnes	5 pts.
Low Concern Wastes < 1000 tonnes	2 pts.

2. Proximity to Private, Commercial, or Municipal Water Supply:

0 - 100 metres	20 pts.
101 - 300 metres	15 pts.
301 - 1000 metres	10 pts.
1001 - 5000 meters	5 pts.

3. Population Served by the Water Supply:

>10000	10 pts.
1001 - 10000	9 pts.
101 - 1000	9 pts.
1 - 100	7 pts.

4. Proximity of Waste to the Water Table:

0 - 5 metres	20 pts.
5 - 10 metres	10 pts.
>10 metres	5 pts.

5. Surrounding Land Use & Proximity to Existing or Proposed Development:

Type of Development	< 300 metres	301-1000 metres	1000-5000 metres
Residential or Housing Site	20 pts.	10 pts.	5 pts.
School or Playground	20 pts.	10 pts.	2 pts.
Commercial or Industrial	10 pts.	3 pts.	1 pt.
Agricultural	10 pts.	3 pts.	1 pt.

6. Condition of Waste Disposal or Storage Site:

Uncovered	10 pts.
Partially Covered	5 pts.
Covered	0 pts.

7. Quantity of Waste:

Tonnes	
> 1000	15 pts.
100 - 1000	7 pts.
< 100	3 pts.

8. Groundwater Flow Relative to Existing or Proposed Development:

Site has potential to impact development	10 pts.
Site has no potential to impace development	0 pts.

9. Yearly Precipitation in Millimetres (as recorded by local weather stations):

> 1400	10 pts.
1251 - 1400	5 pts.
1000 - 1250	0 pts.

10. Evidence of Leachate: 20 pts.

11. Method of Operation:

Open dump	10 pts.
Open dump with burning	8 pts.
Dump with occasional cover	5 pts.
Sanitary Landfill	2 pts.

12. Proximity to Surface Water:

0 - 100 metres	20 pts.
101 - 300 metres	10 pts.
301 - 1600 metres	5 pts.
> 1600 metres	0 pts.

13. Surface Water Use:

Drinking water (Domestic or Agricultural)	15 pts.
Commercial	15 pts.
Recreational or Ecological	10 pts.
Irrigation	8 pts.
Not Currently Used	5 pts.
Too Far to Be Affected	0 pts.

14. Distance to Sensitive Environments or Critical Habitats:
(Estuaries, wetlands, animal sanctuaries, watershed areas, etc.)

1 - 300 metres	10 pts.
301 - 1600 metres	5 pts.
1600 - 8000 metres	2 pts.

15. Soil Permeability of Disposal Area:

0 - 15% clay	20 pts.
15 - 50% clay	10 pts.
50% clay	5 pts.

16. Bedrock Permeability of Disposal Area:

Very Permeable	20 pts.
Moderately Permeable	10 pts.
Impermeable	5 pts.

17. Depth to Bedrock of Disposal Area:

< 10 metres	20 pts.
10 - 19 metres	10 pts.
> 20 metres	5 pts.

18.	Topography:	
	Steep Slope	5 pts.
	Flat	3 pts.
	Moderate	0 pts.
19.	Signs of Vegetation Stress:	5 pts.
20.	Evidence of Vectors:	5 pts.
21.	Evidence of Gas or Odours:	5 pts.
22.	Security of Disposal Area:	
	No Fence or Gate	5 pts.
	Security gate with no Fence	3 pts.
	Secure Fence with Lock	0 pts.
	Maximum Score	295 pts.

APPENDIX F

MATRIX INDICATING 22 SCORING PARAMETERS, SITE LOCATION AND TOTAL POINT SCORE

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
ANN 001	CFB Cornwallis # 1	02	10	07	10	10	00	07	10	00	00	08	10	10	00	05	20	20	03	05	00	00	00	137	2	2	Construction wastes
ANN 002	CFB Cornwallis # 2	05	15	07	10	20	00	15	00	00	00	07	05	10	00	05	20	20	00	00	00	00	00	140	2	3	Construction wastes
ANN 003	CFB Cornwallis # 3	02	10	07	05	10	00	07	00	00	00	00	05	10	00	20	20	20	03	00	00	00	00	119	3	3	
ANN 004	Deep Brook	05	10	07	10	10	10	15	00	00	00	08	05	00	02	10	20	20	03	00	00	00	05	140	2	2	Incinerator
ANN 005	Upper Granville	02	20	07	20	10	10	07	00	00	00	08	20	05	02	05	10	20	03	00	00	00	05	164	2	2	
ANN 006	Carleton Corner	05	20	07	05	20	10	15	00	00	00	08	20	00	02	20	10	20	03	00	00	00	05	170	2	2	
ANN 007	Middleton	05	20	09	10	10	00	15	10	00	00	08	05	00	05	20	10	20	03	00	00	00	05	155	2	2	
ANN 008	Vault Road	10	20	07	20	20	10	15	00	00	20	08	20	05	00	20	10	20	00	00	00	00	05	210	1	2	Incinerator site, leachate present
ANN 009	Annapolis Royal	05	20	09	20	20	00	15	00	00	00	08	20	00	10	20	10	20	03	00	00	00	05	185	2	2	
ANT 001	Brierly Brook Antigonish	05	15	07	20	10	05	15	10	00	00	05	10	08	02	10	10	20	00	00	00	00	03	155	2	1	Large dump
ANT 002	College Road Antigonish	05	10	07	20	20	00	07	10	00	00	08	20	10	02	10	10	20	00	00	00	00	05	164	2	2	
ANT 003	Mattie Site	10	20	07	10	20	10	03	10	10	00	10	05	05	00	20	20	20	00	00	00	00	05	185	2	2	Private Use
CAP 001	Coxheath Mountain	02	15	09	10	05	10	03	00	10	00	10	10	00	10	10	05	20	00	00	00	00	05	134	2	3	Small domestic garbage dump
CAP 002	Front Lake Rd.	02	20	09	20	20	10	07	00	10	00	10	05	15	10	10	20	10	00	00	00	00	03	181	2	2	Domestic garbage
CAP 003	Prince Street Sydney	10	20	10	20	10	00	07	00	10	00	10	20	10	02	10	20	20	00	00	00	00	00	179	2	2	Electroplating dumpsite
CAP 004	Middle Cape Site	02	20	07	20	20	10	07	00	10	00	10	20	15	02	10	20	20	05	00	00	00	05	203	1	2	Dumping along stream
CAP 005	Ling Street New Waterford	15	05	09	20	20	00	15	10	10	00	10	20	10	02	10	20	20	05	05	00	00	05	211	1	1	Coal mine tailings
CAP 006	Douglas St. New Waterford	05	05	09	10	20	00	15	00	10	00	10	20	05	02	00	00	20	05	00	00	00	00	136	2	2	Dumping into the ocean
CAP 007	Sydney Mines	15	10	09	20	20	10	15	10	10	20	10	20	15	05	10	20	20	05	05	00	00	03	252	1	1	Coal mine tailings, leachate present

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
CAP 008	Church Street Sydney Mines	10	05	09	20	20	10	07	00	10	00	10	20	05	05	10	20	20	05	00	00	00	00	191	2	2	Dumping into the ocean
CAP 009	Manning St., North Sydney	05	05	09	20	20	10	15	10	10	00	08	20	05	10	10	20	20	00	00	05	00	00	202	1	1	May be still used for construction materials disposal
CAP 010	Yava Mine Loch Lomond	18	15	07	10	10	10	15	00	10	00	10	20	10	02	05	10	20	00	05	00	00	03	180	2	2	Lead tailings, sellestite waste and barite waste
CAP 011	Coal Mine Florence	15	20	07	20	20	05	15	00	10	20	10	05	05	05	10	20	20	00	05	00	00	05	217	1	1	Coal mine tailings, metal wastes, leachate present
CAP 012	Mine Tailings Little Pond	15	10	07	05	20	10	15	10	10	00	10	20	05	02	10	20	10	05	05	00	00	05	194	2	2	Mine tailings, possible chemicals on site
CAP 013	Dominion Tar Sydney	20	05	10	05	20	00	15	00	10	00	10	10	05	02	20	20	20	03	05	00	00	00	180	2	2	Tar pond still filled with tar. NSDOE currently assessing problem.
CAP 014	Sydney Steel Sydney	05	05	10	20	20	10	15	00	10	00	10	20	05	02	20	20	20	00	00	00	00	00	192	2	2	Slag pile
CAP 015	Hub Head Glace Bay	02	05	07	20	20	00	15	00	05	00	10	20	05	02	10	20	20	05	00	00	00	05	171	2	2	Dumping into the ocean
CAP 016	Quarry Point Glace Bay	02	05	07	20	10	00	15	00	05	00	10	20	05	02	10	20	20	05	00	00	00	05	161	2	3	Dumping into the ocean
CAP 017	Gardiner Mines	15	20	07	20	20	10	15	10	05	20	10	20	05	02	10	20	20	00	05	00	00	05	239	1	1	Coal mine dump, leachate present
CAP 018	Mine Dump Scotchtown	15	05	08	10	20	10	15	00	05	20	10	20	05	10	10	20	20	00	05	00	00	05	212	1	1	Coal mine dump, leachate present
CAP 019	CFB Sydney Lingan Rd.	02	05	07	20	10	10	07	00	05	00	10	05	05	10	10	20	20	00	00	00	00	00	146	2	3	Construction materials
COL 001	Upper North River	02	10	07	20	03	10	07	00	00	00	10	20	10	00	05	10	20	05	00	00	00	05	144	2	2	In contact with North River
COL 002	Summit Site Tatamagouche	02	10	07	10	01	10	03	00	00	00	10	10	05	00	05	10	20	00	00	00	00	03	106	3	3	Domestic garbage dump
COL 003	Wittenburg	05	15	07	10	10	05	15	00	00	00	08	10	10	00	10	20	20	00	05	05	00	03	158	2	2	Large commercial garden downgradient
COL 004	# 2 Highway Stewiacke	05	20	07	20	20	00	07	00	00	00	02	20	10	00	05	05	20	03	00	00	00	05	149	2	2	Domestic garbage
COL 005	Shortt's Lake	18	15	07	05	20	10	07	10	00	00	10	10	05	00	05	05	20	00	05	00	05	00	157	2	2	Odours and animal carcasses present, seen from the highway
COL 006	Prince Street Truro	05	20	10	20	20	00	07	10	00	00	10	10	05	10	20	20	20	03	00	00	00	00	180	2	2	Domestic and farm waste
COL 007	Robie Street Truro	05	15	10	20	10	00	15	10	00	00	02	20	15	10	20	20	20	03	00	00	00	05	190	2	2	Domestic and farm waste

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
COL 008	Debert	05	20	07	10	10	00	07	10	05	00	10	10	05	00	10	10	20	00	00	00	00	00	139	2	2	Industrial area surrounding dump
COL 009	Great Village	05	05	07	10	20	00	15	10	00	00	10	20	10	00	20	10	20	00	00	00	00	05	167	2	2	Domestic wastes
COL 010	College Road BibleHill	05	15	09	20	20	05	15	00	00	20	05	10	05	02	10	20	20	00	00	00	05	05	201	1	1	Large Domestic Dump
CUM 001	Springhill Town Dump	15	15	07	20	20	00	15	10	00	00	10	20	05	00	10	05	20	00	00	00	00	03	175	2	2	Blue dye dumped in site
CUM 002	MacDonald Rd. Amherst	20	20	07	20	20	00	15	10	00	20	05	20	05	02	10	20	05	00	00	00	00	05	204	1	1	PCB's present, monitoring wells on site
CUM 003	Amherst Town Dump	05	20	09	20	20	05	15	10	00	20	10	20	08	05	05	20	20	03	00	00	00	05	220	1	1	Middle of agricultural land
CUM 004	Advocate Harbour	05	10	07	10	10	05	15	10	00	00	10	10	05	02	10	10	10	00	00	00	00	05	134	2	2	Monitoring wells on site
CUM 005	Enheat Prop. Amherst	18	20	10	20	20	05	15	10	00	00	10	20	10	02	20	20	20	00	00	00	00	00	220	1	1	Slag material present, possibly organic solvents disposed on-site
CUM 006	Old Robb Plant Amherst	18	20	09	20	20	00	15	10	00	00	10	10	08	02	05	20	20	03	00	00	00	00	190	2	1	Lead oxide paint - metal shavings
CUM 007	Church Street Amherst	02	10	09	10	20	00	03	00	00	00	10	10	10	02	20	20	20	03	00	00	00	00	149	2	2	
CUM 008	Wallace	05	05	07	20	10	00	15	00	00	00	05	05	05	00	10	10	20	00	00	00	00	05	122	3	2	Located in a marsh area
DIG 001	Meteghan Center	05	10	07	20	05	00	07	00	00	00	08	20	05	00	20	05	20	03	00	00	00	05	140	2	2	
DIG 002	Grosses Coques Wharf	05	10	07	20	05	00	07	00	00	00	08	20	05	00	10	05	20	03	00	00	00	05	130	2	2	
DIG 003	Concession	05	10	07	10	05	00	07	00	00	00	08	05	10	05	10	05	20	00	00	00	00	05	112	3	3	
DIG 004	Mavillete	05	10	07	20	05	00	07	00	00	00	08	10	10	05	05	05	20	00	00	00	00	05	122	3	3	
DIG 005	Central Grove	05	20	07	10	05	10	07	00	00	00	10	20	05	00	10	05	20	00	05	00	00	05	144	2	2	
DIG 006	Tiverton	05	10	07	10	05	10	07	00	00	00	10	10	05	00	10	05	20	00	00	00	00	05	119	3	3	
DIG 007	Pero Jack Cove	05	10	07	10	05	10	07	00	00	00	08	20	05	00	10	05	20	05	00	00	00	05	132	3	3	
DIG 008	Freeport	05	20	07	05	05	00	07	00	00	00	10	20	05	00	10	05	20	05	00	00	00	05	129	3	3	

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
DIG 009	Town of Digby	05	10	09	20	20	00	15	10	00	00	08	20	10	00	10	20	20	00	00	00	00	05	182	2	2	
DIG 010	Westport	05	10	07	05	05	00	07	00	00	00	10	20	05	00	10	05	20	05	00	00	00	05	119	3	3	
GUY 001	Hadleyville (Oily Waste)	15	10	07	10	10	00	15	00	05	00	02	05	00	02	10	05	10	00	00	00	00	03	109	3	3	Oily waste disposal site
GUY 002	Union Street Town of Canso	05	10	09	10	20	00	07	00	05	00	05	05	15	02	10	20	20	00	00	00	00	05	148	2	2	
GUY 003	Sherbrooke	05	20	09	10	20	05	15	10	05	00	08	05	15	10	10	05	20	03	00	00	00	05	180	2	2	In swamp area
GUY 004	Goldenville	05	10	07	10	10	00	07	00	05	00	05	05	00	00	20	05	20	00	00	00	00	05	114	3	3	Area around extensively worked due to gold mining
GUY 005	Ecum Secum	18	10	07	10	10	10	07	10	10	00	10	20	05	00	15	05	20	00	00	05	00	05	177	2	2	Supposed closed but fresh fish dumped on-site
GUY 006	Prince Street Town of Canso	05	15	09	20	20	00	07	00	05	00	10	10	15	10	20	20	20	03	00	00	00	05	194	2	2	
GUY 007	Fox Island Main	18	05	07	20	05	10	07	00	05	00	10	20	10	02	10	05	20	05	00	00	00	05	164	2	2	Oily waste disposal site containing low levels of PCB.'s
GUY 008	Hazel Hill	18	05	07	20	05	05	15	00	05	00	05	05	10	02	20	05	20	00	00	00	00	05	152	2	2	Dredge spoils containing low levels of PCB.'s
GUY 009	Glenelg	05	20	07	10	20	00	07	10	05	00	10	10	05	02	20	20	20	00	00	00	00	05	176	2	1	Possible drilled well on site
GUY 010	Mulgrave	10	05	09	10	10	05	15	10	05	00	10	20	05	02	10	20	20	05	00	00	00	03	174	2	2	Dispute with landowner-he wants reimbursement from the town
HAL 001	North-end Halifax	15	05	07	20	20	00	15	00	05	00	10	00	00	02	10	05	20	05	00	00	00	05	144	2	2	Now used as a park, Fairview Cove Container Pier
HAL 002	Turner Drive Dartmouth	05	05	10	20	10	05	07	00	10	00	08	20	05	02	10	05	20	00	00	00	00	05	147	2	2	
HAL 003	Burnside Drive Dartmouth	05	05	10	20	10	05	15	00	05	00	10	20	05	02	10	05	20	00	00	00	00	05	152	2	2	
HAL 004	Simmonds Drive Dartmouth	10	05	10	20	10	05	15	10	05	20	10	20	05	02	10	05	20	05	00	00	00	05	102	2	2	Leachate present
HAL 005	Incinerator Dartmouth	15	05	10	20	10	10	15	10	05	20	10	05	05	02	10	05	20	03	05	00	00	05	190	2	2	Leachate present
HAL 006	Crichton Ave Dartmouth	15	05	10	10	20	00	15	10	05	00	10	05	10	02	10	05	20	00	00	00	00	05	157	2	1	Large dump surrounded by residential development
HAL 007	Middle Musquodobit	18	10	07	10	10	10	15	00	05	00	10	20	05	00	10	10	05	05	00	05	05	00	160	2	2	Domestic and agricultural waste

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
HAL 008	Private Dump Sheet Harbour	10	10	07	10	10	10	15	00	10	20	10	15	05	02	10	05	20	00	00	05	05	00	179	2	2	Odours present
HAL 009	Minesville	05	10	07	20	10	05	03	00	05	00	00	10	15	00	10	05	20	03	00	00	00	05	133	2	2	
HAL 010	Rainbow Haven	18	20	07	20	20	00	03	10	00	00	10	20	05	10	20	05	20	03	00	00	00	05	196	2	1	Buried transformers on-site
HAL 011	Cow Bay	18	20	07	05	20	10	03	00	05	00	08	20	05	02	10	05	20	00	00	00	00	05	163	2	2	Transformers sitting on the ground
HAL 012	CFB Bedford Incinerator	15	05	09	20	03	00	15	00	05	00	08	10	10	02	10	05	20	05	00	00	00	00	142	2	2	Old county dumpsite
HAL 013	Bedford Dredge Disposal	20	05	09	20	10	00	15	00	05	00	10	05	05	02	10	05	20	00	00	00	00	05	146	2	2	In an old quarry
HAL 014	Southeast Passage	05	05	07	05	20	00	15	10	05	00	10	10	05	02	10	05	20	00	00	00	00	05	139	2	3	
HAL 015	Bissett Road	10	10	07	20	10	10	07	10	05	20	10	20	05	02	05	05	20	03	05	00	00	05	189	2	2	Leachate into swamp
HAL 016	Bissett Road Hospital Dump	05	05	07	20	20	10	07	00	05	00	10	20	05	02	10	05	20	00	00	00	00	05	156	2	3	
HAN 001	Wentworth Rd. Windsor	10	15	07	20	20	05	07	00	00	00	05	05	00	02	05	20	10	03	00	00	00	03	137	2	2	Incinerator
HAN 002	Clifton Ave. Windsor	02	15	07	10	20	00	07	00	00	00	08	05	00	02	05	20	10	00	00	00	00	00	111	3	2	
HAN 003	Bogg Road # 2 Hansport	02	20	07	10	10	10	07	00	00	00	08	20	15	02	05	20	20	00	00	00	00	05	161	2	2	
HAN 004	Bogg Road # 1 Hantsport	02	15	07	10	05	00	07	00	00	00	02	10	15	05	05	20	20	05	00	00	00	05	133	2	2	
HAN 005	Irishman's Rd.	02	15	07	10	10	00	07	10	00	20	10	20	05	02	05	20	20	00	05	00	00	03	171	2	2	Leachate present
HAN 006	Nine Mile River	15	05	07	10	05	00	15	00	05	20	05	05	05	02	20	20	20	03	00	00	00	03	165	2	2	Leachate present, monitoring wells on site
INV 001	Skye Mountain	02	05	07	20	05	10	07	00	05	00	10	10	05	02	10	20	20	00	00	00	00	05	143	2	3	Large domestic dump-remote
INV 002	Cabot Street Inverness	15	10	09	10	10	10	15	00	05	00	10	20	05	02	05	20	20	05	00	00	00	05	176	2	2	Dumping over steep embankement
INV 003	Devco Mine Inverness	15	15	09	20	10	10	15	10	05	20	10	20	05	02	05	20	20	05	05	00	00	05	226	1	1	Coal tailings, Iron staining
INV 004	Mann Ave. Inverness	15	20	07	20	20	00	15	00	05	00	10	20	05	02	05	20	20	00	00	00	00	00	184	2	2	Possible drinking water well on site

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
INV 005	Route # 105	02	10	07	20	05	00	07	00	05	00	10	20	05	02	05	10	20	00	00	00	00	05	133	2	2	Small domestic dump
INV 006	Petit D'Etang	15	20	07	10	10	00	07	10	05	00	10	10	05	02	05	10	20	03	00	00	00	00	149	2	1	Crab processing plant on site, possible drilled well
INV 007	Marsh Brook Road	05	05	07	20	10	10	15	00	05	00	10	05	00	02	10	20	20	05	00	00	00	05	152	2	2	Dumping over embankment
INV 008	Judique (Pig Cove)	05	02	07	20	10	05	03	00	05	00	10	00	00	02	05	05	20	00	00	00	00	05	104	3	3	Possible monitoring wells on site
INV 009	Port Hood Coal Mine	15	20	07	10	20	10	15	00	05	00	10	00	05	02	05	05	20	00	05	00	00	05	159	2	2	Large area-should be gated
INV 010	Port Hood Off Hwy # 19	02	15	07	20	10	00	07	00	05	00	10	20	05	00	05	05	20	00	00	00	00	05	136	2	2	
INV 011	Rankinville Rd Near Mabou	02	10	07	20	10	10	07	00	05	00	10	20	05	02	05	20	20	05	00	00	00	05	163	2	2	Dumping into the river, rat problem in the past
INV 012	Orangedale Rd.	05	15	07	10	10	00	07	00	05	00	10	05	00	00	05	20	20	00	00	00	00	03	122	3	3	Construction materials
INV 013	Queensville Off Hwy. # 105	02	15	07	20	10	05	07	00	05	00	10	20	05	02	10	05	20	00	00	00	00	05	148	2	2	Poor clean-up
INV 014	Barberton Rd. Port Hastings	10	20	07	20	10	00	15	10	05	20	08	10	05	05	05	20	20	00	00	00	00	00	190	2	2	PCB's, race track on site
KIN 001	Meadowview Kentville	05	10	09	10	20	00	15	00	00	00	08	10	15	02	10	10	10	00	00	00	00	05	139	2	2	
KIN 002	Langie Road & Brooklyn Street	05	10	09	05	10	00	15	00	00	00	08	05	15	02	10	10	10	03	00	00	00	05	122	3	2	
KIN 003	Park Street Kentville	05	15	09	10	20	00	07	00	00	00	08	10	15	02	10	10	10	03	00	00	00	00	134	2	2	
KIN 004	Brooklyn St. Kentville	05	20	0	20	20	00	07	00	00	00	02	10	15	02	10	10	20	03	00	00	00	05	158	2	2	
KIN 005	Tupper Rd. Kentville	05	10	07	05	20	00	15	10	00	00	02	05	08	02	10	10	10	03	00	00	00	00	122	3	2	Landfill
KIN 006	Kentville Research Station	18	15	07	10	20	00	03	10	00	00	02	10	05	10	10	05	20	03	00	00	00	00	148	2	3	Organophosphates, insecticides, fungicides
KIN 007	Orchard St. Berwick	02	20	07	10	20	00	07	10	00	00	08	05	05	02	10	10	10	03	00	00	00	05	134	2	2	
KIN 008	Witman Rd. Aylesford	05	10	07	05	10	00	15	00	00	00	10	05	10	00	10	10	10	03	00	00	00	05	115	3	3	
KIN 009	CFB Greenwood # 1	05	10	07	10	10	00	15	00	00	00	08	20	05	02	10	05	20	03	05	00	00	00	135	2	2	Military wastes

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
KIN 010	CFB Greenwood # 3	05	10	09	20	20	00	15	00	00	00	02	20	05	02	10	05	20	03	00	00	00	00	146	2	2	Road construction materials
KIN 011	CFB Greenwood # 4	05	10	09	10	20	00	15	10	00	00	02	20	05	02	10	05	20	03	00	00	00	00	146	2	2	Construction materials
KIN 012	CFB Greenwood # 5	05	15	07	20	20	00	15	00	00	00	02	20	05	02	10	05	20	03	00	00	00	00	149	2	2	Construction materials
KIN 013	CFB Greenwood # 7	05	10	07	10	10	00	15	10	00	00	02	20	05	02	10	05	20	03	00	00	00	00	134	2	2	Construction materials
KIN 014	CFB Greenwood # 8	05	10	07	20	10	00	15	00	00	00	02	20	05	02	10	05	20	03	00	00	00	00	134	2	2	Runway construction materials
KIN 015	CFB Greenwood # 9	15	10	07	10	10	00	15	00	00	00	02	10	10	00	10	05	20	03	00	00	00	00	127	3	3	Armament disposal, munitions metals
KIN 016	Main Street Wolfville	05	05	07	20	20	00	15	00	00	00	10	20	05	05	10	10	20	03	00	00	00	00	155	2	2	Now pole yard for NSPC
KIN 017	Summer Street Canning	05	10	09	20	20	00	15	10	00	00	08	10	15	10	10	05	20	00	00	00	00	05	177	2	2	
KIN 018	Maple Ave., Wolfville	10	05	07	10	20	00	15	00	00	00	10	05	15	05	10	10	20	00	00	00	00	00	142	2	2	Incinerator
KIN 019	University Ave Acadia Univ.	05	05	07	10	20	00	15	00	00	00	08	05	15	05	10	10	20	00	00	00	00	00	135	2	2	Now a parking lot
KIN 020	Main Street Wolfville	05	05	07	10	20	00	15	00	00	00	10	10	05	02	10	10	20	00	00	00	00	00	129	3	2	Now a parking lot
KIN 021	Tupper Road New Minas	05	15	07	10	20	00	15	10	00	00	02	10	05	00	10	10	20	00	00	00	00	05	144	2	2	
KIN 022	Bluff Road Avonport	05	15	07	10	10	05	15	00	00	00	08	20	05	00	10	10	20	00	00	00	00	05	145	2	2	
KIN 023	Warehouse Road New Minas	05	15	07	10	10	05	15	00	00	00	08	20	10	00	10	10	20	05	00	00	00	05	155	2	2	
KIN 024	Off Hwy.# 201 Kingston	05	10	07	20	10	00	15	00	00	00	08	20	10	02	10	05	20	03	00	00	00	03	148	2	2	
KIN 025	Waterville	05	10	07	10	10	10	15	10	00	00	08	05	10	00	10	10	20	03	00	00	00	05	148	2	2	
KIN 026	Victoria Hbr. Rd., Aylesford	02	20	07	10	20	10	07	00	00	00	08	10	10	00	10	10	05	03	00	00	00	05	137	2	2	
LUN 001	Alexandra Ave. Bridgewater	05	10	09	10	20	00	15	00	05	00	08	05	05	05	10	05	20	00	00	00	00	00	132	2	2	
LUN 002	Starr Street, Lunenburg	05	15	07	10	20	00	15	00	05	00	08	10	10	10	05	05	20	03	00	00	00	03	151	2	2	Scrap metal

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
LUN 003	New Cumberland	02	10	07	10	20	00	07	00	05	00	08	05	00	02	05	05	20	00	00	00	00	05	111	3	3	
LUN 004	Conrod Road	02	10	07	10	20	00	07	00	05	00	08	05	00	02	10	05	20	00	00	00	00	05	116	3	3	
LUN 005	Riverport	05	10	07	10	10	10	15	00	05	20	10	10	00	02	00	05	20	05	00	00	00	03	147	2	2	On bedrock
LUN 006	Logan Street, Bridgewater	05	15	07	10	20	10	15	00	05	00	08	20	00	02	10	05	20	00	00	00	00	05	157	2	2	Continued dumping of construction Materials
LUN 007	Beech Hill Rd. Private dump	02	05	07	10	05	10	07	00	05	00	08	10	00	02	20	20	20	00	00	00	00	05	136	2	2	
LUN 008	Beech Hill Rd. Municipal dump	05	15	07	10	20	00	07	00	05	20	08	10	00	02	20	20	20	03	00	00	00	05	177	2	2	Leachate
LUN 009	Chester	02	10	07	20	05	05	07	00	05	00	08	10	00	02	10	10	20	00	00	00	00	05	126	3	3	
LUN 010	Common Road Chester	02	20	07	10	20	00	07	10	05	00	08	05	05	00	10	05	20	03	00	00	00	00	137	2	2	
LUN 011	Bridgewater	05	15	07	10	20	00	15	10	05	00	08	05	00	02	10	05	20	03	00	00	00	05	145	2	2	
LUN 012	Canexel Plant East River	18	10	07	05	05	10	15	10	05	20	02	10	05	05	05	20	10	00	05	00	00	00	157	2	2	Industrial waste only-paint cans, boards, etc.
PIC 001	New Glasgow	15	10	07	10	20	10	15	10	00	20	08	20	10	05	05	20	10	05	00	00	00	05	205	1	2	Steel waste,incinerated garbage, dumping into the river
PIC 002	Priestville	15	10	07	20	10	00	15	10	00	20	02	05	05	05	05	20	10	00	00	00	00	03	162	2	1	Oily waste, large dump
PIC 003	Thorburn	10	10	07	10	10	00	15	00	00	00	08	05	05	05	05	20	20	00	00	00	00	05	135	2	3	Very Large, iron staining, monitoring wells
PIC 004	West River Rd.	05	15	07	05	10	00	15	00	00	00	07	20	05	05	05	10	05	05	00	00	00	00	120	3	3	Oil dumped
PIC 005	Foster Ave. Stellarton	05	05	07	20	20	00	07	00	00	00	10	20	05	05	05	20	05	05	00	00	00	03	142	2	2	
QUE 001	Liverpool	05	10	07	10	10	00	07	10	10	00	08	05	10	05	05	05	00	00	00	00	00	05	122	3	2	
RIC 001	Fourchu	10	05	07	05	01	00	07	00	10	00	02	05	00	00	10	05	10	00	00	00	00	03	080	3	3	Oily waste
RIC 002	Oban Road	15	05	07	05	05	00	07	00	05	00	05	05	00	02	10	10	10	03	00	00	00	05	099	3	3	Oily Waste
RIC 003	Irish Cove	02	05	07	20	05	10	07	00	05	00	10	20	00	00	10	20	20	05	00	00	00	05	151	2	3	Near Stream, illegal dumping

SITE NO.	LOCATION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	TOTAL POINT SCORE	CATE-GORY	INSP. OPINION	NOTES
RIC 004	Petit d'Grat	18	20	07	20	20	00	15	10	05	00	02	05	05	02	10	10	20	03	00	00	00	05	177	2	3	Dredge spoils, containment area Created for spoils due to PCB's
RIC 005	Lochside	10	10	07	10	10	00	07	00	05	00	05	20	00	02	10	05	20	03	00	00	00	05	129	3	3	Oily waste
RIC 006	Stirling Mine Site	15	15	07	20	20	10	15	00	05	00	10	20	15	02	10	10	20	03	05	00	00	05	207	1	1	Lead & zinc mine tailings, very large area
SHE 001	U. Water St., Lockeport	02	20	07	05	20	10	07	00	05	00	08	20	05	00	05	05	20	03	00	00	00	05	147	2	2	
SHE 002	John Street, Lockeport	02	20	07	05	20	00	03	00	05	00	08	20	05	00	05	05	20	03	00	00	00	05	133	2	2	
SHE 003	The Slough	15	05	07	05	01	00	07	00	05	00	05	20	00	02	05	05	20	03	00	00	05	05	115	3	2	Salt fish waste, Blood odour & odours
SHE 004	Goose Lake Rd.	05	10	07	05	05	00	15	00	05	00	10	05	10	02	05	05	20	03	00	00	00	05	117	3	3	
SHE 005	Canada Hill Road # 2	02	05	007	05	001	00	03	00	05	00	10	00	00	02	10	05	10	03	00	00	00	03	071	3	3	
SHE 006	Canada Hill Road # 3	02	05	07	005	01	10	03	00	05	00	10	10	05	02	10	05	10	03	00	00	00	05	098	3	3	Refuse from gas stations, oil cans
SHE 007	Canada Hill Road # 1	02	05	07	05	01	10	03	00	05	00	10	10	05	02	10	05	10	03	00	00	00	05	098	3	3	
SHE 008	Lockeport	05	15	07	20	20	00	15	00	05	00	10	20	10	00	05	05	20	03	00	00	00	05	165	2	2	Elevated PCB's
SHE 009	West Green Harbour	02	20	07	05	20	00	07	00	05	00	10	20	05	00	10	05	20	00	00	00	00	05	141	2	2	Dredge spoils, near well supplying water for school
VIC 001	Boularderie	02	05	07	20	05	00	07	00	05	00	10	05	05	00	10	20	10	00	00	00	00	05	116	3	3	Small domestic dump
VIC 002	Highway # 105	02	20	07	10	10	10	07	00	05	00	10	20	05	00	10	20	10	05	00	00	00	05	156	2	2	Domestic dump
YAR 001	Water Street Yarmouth	05	05	07	10	20	00	15	00	05	00	08	20	05	02	05	05	20	00	00	00	00	00	132	2	2	
YAR 002	Broad Gauge Yarmouth	05	20	07	10	10	00	15	00	05	00	08	05	10	05	05	05	20	03	00	00	00	00	133	2	2	
YAR 003	Pleasant St., Yarmouth	05	05	07	10	20	00	07	00	05	00	08	10	10	02	05	05	20	03	00	00	00	00	122	3	3	
YAR 004	Thump Cap Rd. Yarmouth	05	20	07	10	20	00	15	00	05	00	08	10	10	02	05	05	20	00	00	00	00	00	142	2	2	
YAR 005	Wedgepoint	05	10	07	05	20	10	15	00	05	00	10	20	05	02	20	05	20	03	00	00	00	00	162	2	2	
YAR 006	Highway to West Pubnico	02	10	07	05	20	00	07	00	05	00	08	10	05	02	20	05	20	03	00	00	00	06	134	2	2	

APPENDIX G
SUMMARY OF GOLD MINING ACTIVITY IN NOVA SCOTIA

	Location of Activity	General Comments on Operation
1	Ardoise - Hants County 55 miles east of Ellerhouse.	Gold discovery reported in 1868, no extensive mining.
2	Beaver Dam - Halifax County on the Killog branch of West River, Sheet Harbour.	First discovery reported in 1868 where the property was worked until 1926.
3	Blockhouse - Lunenburg County a short distance west of Mahone Bay.	Beginning in 1888 through to 1901, 1788 ounces of gold were removed.
4	Brookfield - Northeastern corner of Queens County.	Gold discovered in 1885 with extensive work conducted on the property. Total quantity of gold removed was 42,251 ounces (1887-1922).
5	Caribou (Moose River) - Northeastern part of Halifax County 6 miles south of Musquodoboit Valley.	Operations began in 1867 continuing until 1926 where over 60,000 ounces of gold were removed from the property.
6	Carleton - situated near the Village of Carleton in Yarmouth County, 16 miles northeast of Yarmouth.	Gold was discovered in the spring of 1886 where over 350 ounces of gold were extracted up to 1915.
7	Central Rawdon - situated in the Central part of Hants County, 5 or 6 miles east of Mosherville.	Between 1887 and 1924, 9820 ounces of gold were removed.
8	Clam Harbour - situated on Clam Bay in Halifax County, 47 miles east of the City of Halifax.	A few shafts were sunk on the property and veins were opened, but little extensive work was conducted. (1904)
9	Cochrane Hill - situated on the northern part of Guysborough County a mile or two southeast of the confluence of the east and west branches of the St. Mary's River. Ten miles north of the Town of Sherbrooke.	Exploration began in 1868 with over 300 ounces being removed up to 1927.
10	Country Harbour - situated in the central part of Guysborough County on Country Harbour River.	A discovery was made in September, 1861 with over 500 ounces of gold being removed by 1912.
11	Cow Bay - situated on the east side of Halifax Harbour.	Work began on the property in 1896 where over 1000 ounces of gold were removed from the property up to 1905.
12	Cranberry Head - located near the seashore at Cranberry Head about 5 miles north of Chegoggin in Yarmouth County.	Gold was discovered on the property in 1868 and up to 1919, 160 ounces of gold were extracted.
13	East Rawdon - situated near the central part of Hants County.	First mentioned in 1884 and closed in 1901 with a total production of gold close to 7000 ounces.
14	Ecum Secum - situated in the extreme eastern end of Halifax County, a short distance west of the mouth of Ecum Secum River.	A discovery was reported in 1868 with 500 ounces being removed up to 1902.
15	Elmsdale - Located on Keyes Brook in Halifax County.	No information given on gold removed.
16	Fifteen Mile Brook - situated in the eastern part of Queens County, on the Liverpool-Caledonia Road, 4 miles north of Middlefield.	Between 1910 and 1914, 488 ounces of gold were removed.
17	Fifteen Mile Stream - lies on the eastern end of Halifax County on a branch of East River, Sheet Harbour.	A discovery was reported in 1867 with site development continuing until 1911. A total of 19,043 ounces of gold were extracted in this period.

18	Forest Hill - situated in the central part of Guysborough County about 6 or 7 miles northeast of Country Harbour gold district.	First discovered in 1893 with over 4000 ounces of gold being removed up to 1926.
19	Gold Lake (Scraggy Lake) - situated in Halifax County 4 miles south of Moose River Gold mines on the south shore of Gold Lake.	Test pits were sunk on several veins.
20	Gold River (Chester Basin) - situated on Gold River in Lunenburg County. Five miles north of the Town of Chester.	Gold was first discovered in September, 1861 with work continuing until 1915. Approximately 3000 ounces of gold were removed from this property.
21	Harrigan Cove - situated in the southeastern corner of Halifax County, near the Atlantic Coast, and 5 miles east of Port Dufferin.	Work began in 1868 with exploration on site and mining was discontinued in 1916. Up to 7,920 ounces of gold were removed from the property.
22	Indian Path - situated in Lunenburg County on the peninsula lying between Lunenburg Bay and LaHave River.	Between 1869 and 1896, 50 ounces of gold were removed.
23	Isaac Harbour - situated on Isaac Harbour in the County of Guysborough.	Gold was discovered on the property in 1861. In excess of 10,000 ounces were extracted up to 1927.
24	Lower Seal Harbour - Two miles east of Isaac Harbour.	Between 1862 and 1920, approximately 127,824 ounces of gold were mined on this property.
25	Kemptville - Located in Yarmouth County, 23 miles northeast of the Town of Yarmouth.	In the years between 1898 and 1927 approximately 956 ounces of gold were removed.
26	Killog - Lies in the eastern part of Halifax County on Killog River, a tributary of West River, Sheet Harbour.	Between 1891 and 1926 up to 1412 ounces of gold were extracted.
27	Lake Catcha - situated in Halifax County, on the peninsula between Chezzetcook and Petpeswick Harbour.	Discovered in 1865 with gold production in excess of 30,000 ounces up to 1925.
28	Lawrencetown — located in Halifax County at the junction of Partridge and Salmon Rivers near the head of St. Lawrence Lake.	Gold was discovered in 1861, with a total production 12,936 ounces of gold.
29	Leipsigate (Millipsigate) - situated in Lunenburg County, 6.5 miles west of Bridgewater.	Between 1897 and 1908 this mine produced 12,936 ounces of gold.
30	Molaga (Molega) - situated on the eastern end of Queens County, 5 miles south of Brookfield.	Over 20,000 ounces of gold were removed from this mine site between 1889 and 1927.
31	McKay Settlement - situated in Hants County, one mile southwest of Upper Newport and approximately 5 miles by road from Brooklyn Station.	Discovery of gold was reported in 1860, but little work was done other than that of an exploratory nature.
32	Miller Lake - This district lies in the western part of Guysborough County, 5 miles from Ecum Secum bridge.	The area was prospected in 1903 and sporadic work continued until 1928, 9 ounces of gold from 18 tons of ore was mentioned.
33	Mill Village - Located in the southwestern part of Queens County, one mile west of Port Medway River.	In excess of 700 ounces were produced between 1881 and 1919.
34	Montague - Located in Halifax County, about 5 miles northeast of Dartmouth across the harbour from Halifax.	Between 1863 and 1925 over 45,000 ounces of gold were extracted from this area.

35	Moosehead — lies on the eastern end of Halifax County, 2 miles South of Moser River.	Gold production was 185 ounces between 1911 and 1915.
36	Mooseland - situated in the eastern part of Halifax County 12 miles northwest of Tangier gold district.	Work began in 1858 continuing up to 1914. Production was over 1500 ounces.
37	Moose River - lies in Halifax County approximately 34 miles to the southeast of Shubenacadie.	Gold was discovered in 1866 with the site being continually worked up to 1909. Production is included with that of Caribou.
38	Mount Uniacke - The mine site is situated in Hants County, 3 miles north of Mount Uniacke.	Extensive work was conducted in this area between 1867 and 1926. Gold production totalled 46,311 ounces.
39	Oldham - situated in the northern part of Halifax County about 25 miles north of the City of Halifax and 3 miles east of Enfield.	Between 1862 and 1927, 71,712 ounces of gold were taken from this property.
40	Ovens - situated in Lunenburg County on a small point of land on the west side of Lunenburg Bay.	Between 1862 and 1896, over 2000 ounces of gold were taken from this area. The majority was from alluvial washings.
41	Renfrew - lies in Hants County 4 miles northeast of Enfield, 27 miles from the City of Halifax.	Between 1862 and 1927, over 49,000 ounces of gold were taken from the property.
42	Salmon River - situated on the eastern side of Salmon River in the eastern part of Halifax County, 4 miles from Port Dufferin.	Over 35,000 ounces of gold were removed from this area between 1883 and 1925.
43	Sherbrooke or Goldenville - lies in Guysborough County 2 miles west of Sherbrooke and close to the Northwest Arm of St. Mary's River.	Much work was conducted in this area with a total production of 168,986 ounces, between 1862 and 1927.
44	South Branch Stewiacke - situated on South Branch Stewiacke River in southern Colchester County.	A discovery of gold was reported in 1865 and work was conducted off and on until 1907.
45	South Uniacke - situated on the boundary between Halifax and Hants Counties.	Over 5000 ounces of gold were recovered between 1889 and 1895.
46	Tangier - located in Halifax County at the head of Tangier harbour and Pope Harbour.	Production between 1862 and 1919 exceeded 29,000 ounces of gold.
47	Upper Seal Harbour - situated in Guysborough County at the head of Isaac Harbour, and about 2.5 miles north of Isaac Harbour gold district.	Work began in 1892 where over 50,000 ounces were extracted up to 1905.
48	Voglers Cove — The mine lies in the southwestern part of Lunenburg County, 2 miles north of Voglers Cove.	A five (5) storey mill was erected in 1895 and work continued until 1905.
49	Waverley - situated in Halifax County, 12 miles north of the City of Halifax.	Production between 1862 and 1918 exceeded 69,000 ounces.
50	Westfield - situated in the northeastern part of Queens County, about 4 miles northeast of Caledonia.	Gold was discovered in 1888 and shafts were sunk on the property, work continued until 1895.
51	Whiteburn - located in the northwestern part of Queens County, 6 miles southwest of Caledonia.	Between 1887 and 1894, almost 10,000 ounces of gold were produced.

52	Wine Harbour — situated in Guysborough County on a harbour of the same name, 12 miles southeast of Sherbrooke.	Between 1862 and 1907, over 40,000 ounces were produced at this site.
53	Barrachois River - near St. Ann Bay, Victoria County.	A small amount of work was conducted on the property.
54	Cheticamp - located on L'Abine Brook, a tributary of Cheticamp River in the northern part of Inverness County.	Many different minerals were mined on this property along with gold extraction in alluvial deposits.
55	Clyburn Brook - 40 miles north of Sydney on a branch of the same name in Victoria County.	Gold was discovered in 1910 but little work was conducted on the property.
56	Middle River or Wagamatkook - situated in Victoria County on Middle River, about 15 miles from Baddeck. First, second and third gold brooks are also part of this mining network.	Between 1908 and 1916, 1670 ounces of gold were taken from this property.
57	Whycocomagh - lies in Inverness County 1.5 miles north of the Village of Whycocomagh at the head of St. Patrick's Channel.	This area was worked during 1897 and 1898, after this period little work was conducted.

APPENDIX H *

(SEPARATE VOLUMES A & B)

A – Photographs of 172 Abandoned Dump Sites

B – Site Inspection Sheets

* *This information is on file at the Nova Scotia Department of the Environment-Available on request only.*

Nova Scotia Department of the Environment
PO Box 2104
Halifax, Nova Scotia
B3J 3B7

APPENDIX I

UNCLASSIFIED ABANDONED WASTE DISPOSAL SITES

UNCLASSIFIED ABANDONED WASTE DISPOSAL SITES

No.	Location	Type of Dump	Nearby Water Courses	Bedrock	Remarks
1.	Eskasoni	mod. landfills	one fill adjac. to Bras d'Or Lakes, other 100 ft. from Indian Brook & near Bras d'Or Lakes		
2.	Ingonish	open		Horton Gp - shale, arkosic ss, conglom	
3.	Iona	open	into ravine		fires, etc.
4.	Cape Auget				phased out now
5.	Dominion	mod. sanitary landfill		Pennsylvanian-shale, ss, lst, coal	
6.	L'Ardoise	mod. landfill		Horton Gp-conglom, ss, shale	former oil disposal site
7.	Louisdale	mod. landfill	¼ mi. from lake, & brook running into Louisdale Hbr.	Riversdale Gp-conglom, ss, shale, lst, coal	to be phased out
8.	New Waterford	sanitary landfill	in bogland-eventually drains into Irish Brook	Pennsylvanian-shale, ss, lst, coal	
9.	Port Hawkesbury	open	Embree Brook through par of dump	Pennsylvanian-shale, ss, siltstone, minor lst	periodically pushed into gully with steep banks, smoke problem
10.	Port Royal	mod. landfill			combustibles burned
11.	Whycocomagh	open	200 yds. north of St. Patrick's Channel		
12.	Hollow Mountain Road				
13.	Mount Uniacke	incinerator		contact of Meguma (slate) & Devonian gte	
14.	Sunken Lake	open	adjac. to Sunken Lake & Gaspereau River	Annapolis Fm	
15.	Amherst Wood Burning				sawdust burnt
16.	Bass River	incinerator			
17.	Brookfield	mod. landfill		Windsor Gp-shale, lst, gymsum, anhydrite	
18.	Heather Beach	open	adjac. to swamp draining into River Philip		
19.	Oxford	open & burning		Pictou Gp Middlboro Fm-wells (Triassic)	

No.	Location	Type of Dump	Nearby Water Courses	Bedrock	Remarks
20.	Parrsboro	open & controlled	swamp or peat moss bog & brooks one mi. away	Riversdale Gp-conglom ss, shale, minor coal & lst	
21.	Pugwash	open	100-200 yds from head of harbour	Pictou-Windsor Gps	
22.	River Hebert	open		Cumberland Gp-conglom, ss, shale, minor lst & coal	
23.	Upper Stewiacke	incinerator	50 ft from brook draining 2 mi. to Stewiacke River		
24.	Guysborough	open	½mi. to nearest lake, 3 mi. from harbour	Horton Gp-shale arkose, ss, conglom	in structurally low area
25.	Garden Lots (National Sea Products)	incinerator	adjacent to Eel Pond		
26.	Garden Lots	open	200 ft from tidal water		
27.	Greenfield	open			
28.	Lunenburg	open & incinerator	several hundred feet from ocean	Halifax Fm-shale, schist, minor qtzite	
29.	New Ross	open			
30.	Simms Settlement	open			

APPENDIX J *

REPORT BY MINES AND ENERGY OUTLINING POTENTIAL POLLUTION PROBLEMS WITH AN ABANDONED GOLD MINE SITE IN GOLDENVILLE

* *Available on request at the Nova Scotia Department of the Environment Library*

Nova Scotia Department of the Environment
PO Box 2104
Halifax, Nova Scotia
B3J 3B7

APPENDIX K
MAPS INDICATING LOCATION OF
ACTIVE AND ABANDONED DUMP SITES

** Available on request at the Nova Scotia Department of the Environment Library*

Nova Scotia Department of the Environment
PO Box 2104
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